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| 09/828,865 | 04/10/2001 | Mark T. Corl | 2916-0128P | 6950 |

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| EXAMINER |
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SALTARELLI, DOMINIC D

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| ART UNIT | PAPER NUMBER |
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2623

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
|--|-------------------|---------------|
| 3 MONTHS | 03/13/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/13/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

09/828,865

Applicant(s)

CORL, MARK T.

Examiner

Dominic D. Saltarelli

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6,9 and 11-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,9 and 11-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 26, 2006 have been fully considered but they are not persuasive.

First applicant argues that Arsenault has nothing to do with sending EITs and ETTs in a DTV packet stream (applicant's remarks, page 14).

In response, the examiner must respectfully disagree with applicant's assertion, because Arsenault teaches sending program guide information for discrete time blocks over data carousels (see fig. 5), and program guide information (see fig. 3) is precisely what EIT information is defined to be by the ATSC specification (see doc. A/65, page 30). Further, Arsenault is not relied upon to teach anything regarding ETTs.

Second, applicant argues that the combination of ATSC and Waldroup does not teach inserting ETTs into a data stream because Waldroup does not teach ETTs and ATSC lists them as "optional" (applicant's remarks, page 14).

In response, simply because ATSC lists insertion of a series of ETTs which contain program description information of corresponding EITs as optional is very different from not disclosing them at all. Simply because ATSC designates said tables as optional is by no means a sufficient reason to ignore their disclosure therein. That being established, the only claimed deficiency of the ATSC reference regarding ETTs is the frequency by which they are inserted,

and Waldroup very simply teaches it is a common practice in the art to transmit table data at regular intervals.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 6, and 11-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21, 22, and 26 of copending Application No. 11/075,928. Although the conflicting claims are not identical, they are not patentably distinct from each.

Claim 1 of 09/828,865, lines 1-5:

"For a digital television packet stream having a plurality of different types of tables, a method to optimize a bandwidth usage of a data stream and to determine issuance intervals for a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) that are inserted in the data stream"

correspond to claim 21, lines 1-3 of 11/075,928:

"A method to optimize a bandwidth of a digital television (DTV) packet stream and to determine transmission cycles for tables to be transmitted as part of the DTV packet stream"

Claim 1 of 09/828,865, lines 5-15:

"wherein the EITs are assigned to cover different ranges of broadcasting time, and an issuance interval for an EIT is a period at which the corresponding EIT is issued, the method comprising: setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future; setting a uniform issuance interval for ETTs to be transmitted in sequence, wherein the ETTs contain program description information associated with the EITs respectively"

correspond to claim 21, lines 4-9 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the

Art Unit: 2623

transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span; setting a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program description information associated with the EITs”

Claim 1 of 09/828,865, lines 16-19:

“inserting the EITs at the non-uniform issuance intervals, respectively, into the data stream; and inserting the ETTs at the uniform issuance intervals, respectively, into the data stream”

correspond to claim 21, lines 10-12 of 11/075,928:

“inserting the EITs into the DTV packet stream at the non-uniform transmission cycles, respectively, and inserting the ETTs into the DTV packet stream at the uniform transmission cycle”

Claim 6 of 09/828,865, lines 1-5:

“A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital system packet stream and to insert a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the digital system packet stream”

correspond to claim 26, lines 1-4 of 11/075,928:

"A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital television (DTV) packet stream and to generate tables to be transmitted as part of the DTV packet stream"

Claim 6 of 09/828,865, lines 6-18:

"an interface to supply issuance-interval setting information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the corresponding EIT is issued, and the issuance interval setting information is an assigned of each of the EITs to cover one of different ranges of broadcasting time; an interval determination unit to determine non-uniform issuance intervals respectively for the EITs, based upon the issuance interval setting information, and to determine a uniform issuance interval for the plurality of ETTs to be transmitted in sequence, the ETTs containing program description information associated with the EITs respectively, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearing a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future"

correspond to claim 26, lines 5-11 of 11/075,928:

"a transmission cycle determination unit to set non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans such that the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT coving a later

Art Unit: 2623

time span, wherein the transmission cycle determination unit further sets a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program information associated with the EITs”

Claim 6 of 09/828,865, lines 19-21:

“wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into the digital system packet stream”

correspond to claim 26, lines 12-14 of 11/075,928:

“a table insertion unit to insert the EITs into the DTV packet stream at the non-uniform transmission cycles, respectively, and to insert the ETTs into the DTV packet stream at the uniform transmission cycle”

Regarding claim 11 of 09/828,865, lines 1-2:

“The PSIP generator of claim 6, wherein said PSIP generator is embodied in the form of a processor running software.” is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 12 of 09/828,865, lines 1-2:

“The PSIP generator of claim 11, wherein said software is written in the computer language Java” is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 13 of 09/828,865, lines 1-3:

"A processor readable article of manufacture having embodied thereon software comprising a plurality of code segments to perform the method of claim 1." is an obvious variation over the method disclosed in claim 21, lines 1-2, of 11/075,928.

Regarding claim 14 of 09/828,865, lines 1-4:

"A processor-readable article of manufacture having embodied thereon software comprising a plurality of code segments to cause a processor to perform the functional aspects of the program and system information protocol (PSIP) generator of claim 6." is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 15 of 09/828,865, this claim directly corresponds to claim 22 of 11/075,928.

Regarding claim 16 of 09/828,865:

"The method of claim 15, wherein in the setting step, the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases"

correspond to claim 21, lines 4-7 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span"

Regarding claim 17 of 09/828,865, this claim corresponds to claim 22 of 11/075,928.

Regarding claim 18 of 09/828,865:

"The PSIP generator of claim 17, wherein the non-uniform interval determination unit determines to increase the issuance intervals respectively for EIT-0, EIT-1, and EIT-2 as the table number increases."

corresponds to claim 21, lines 4-7 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span"

Regarding claim 19 of 09/828,865, each of the claim limitations of claim 1 are found therein, and includes a further limitation of the groups of EITs and ETTs include EIT-0, EIT-1, EIT-2 and ETT-0, ETT-1, ETT-2, respectively, wherein the transmission cycles of the group of EITs are non-uniform with respect to each other based on

Art Unit: 2623

closeness in coverage time to which each EIT in the group of EITs is assigned, to a current broadcasting time (claim 19, lines 3, 5-7, and 13).

This corresponds to claim 22 of 11/075,928, which also discloses including tables 0 through 2 for the EIT group, rendering inclusion of tables 0 through 2 for the ETTs as an obvious variation as well, and claim 22 depends from claim 21, which states “the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an IET covering a later time span” (lines 5-7).

Regarding claim 20 of 09/828,865:

“The method of claim 19, wherein in the setting step, the transmission cycles are set respectively for EIT-0, EIT-1, and EIT-2 in the group of EITs to increase as the EIT table number increases.”

correspond to claim 21, lines 4-7 of 11/075,928:

“setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span”

Regarding claims 21 and 26 of 09/828,865, each of the claim limitations of claim 19 are present in claims 21 and 26, and thus similarly correspond to claims 21 and 22 of 11/075,928.

Art Unit: 2623

Regarding claims 22-25 and 27, each of the claim limitations of claim 19 are present in claims 22-25 and 27, and further the limitations:

transmission/issuance interval for $EIT_{i-1} < \text{transmission/issuance interval for } EIT_i$
for $i = 1$ and 2

transmission/issuance interval for $ETT_{i-1} = \text{transmission/issuance interval for } ETT_i$
for $i = 1$ and 2

correspond to the non uniform transmission cycles for EITs and uniform transmission cycle for ETTs described in claim 21, lines 4-9, of 11/075,928:

“setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span; setting a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program description information associated with the EITs”

4. Claims 1 and 6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 8 of copending Application No. 11/075,944. Although the conflicting claims are not identical, they are not patentably distinct from each.

Claim 1 of 09/828,865, lines 1-5:

“For a digital television packet stream having a plurality of different types of tables, a method to optimize a bandwidth usage of a data stream and to determine

Art Unit: 2623

issuance intervals for a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) that are inserted in the data stream”

correspond to claim 8, lines 1-3 of 11/075,944:

A method for optimizing bandwidth usage of data stream and for inserting a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the data stream in a broadcast environment”

Claim 1 of 09/828,865, lines 5-15:

“wherein the EITs are assigned to cover different ranges of broadcasting time, and an issuance interval for an EIT is a period at which the corresponding EIT is issued, the method comprising: setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future; setting a uniform issuance interval for ETTs to be transmitted in sequence, wherein the ETTs contain program description information associated with the EITs respectively”

correspond to claim 8, lines 4-10 of 11/075,944:

“setting a first transmission interval for a first group of EITs containing program information covering a first broadcast time, and a second transmission interval for a second group of EITs containing program information covering a second broadcast time after the first broadcast time; setting a uniform transmission interval for a first group of

Art Unit: 2623

extended text tables (ETTs) containing program description information associated with the first group of EITs and for a second group of ETTs containing program description information associated with the second group of EITs”

Claim 1 of 09/828,865, lines 16-19:

“inserting the EITs at the non-uniform issuance intervals, respectively, into the data stream; and inserting the ETTs at the uniform issuance intervals, respectively, into the data stream”

correspond to claim 8, lines 11-17 of 11/075,944:

“generating the first and second groups of EITs; generating the first and second groups of ETTs; inserting the first and second groups of EITs into the data stream, wherein the first group of EITs are inserted into the data stream more frequently than the second group of EITs based on the first and second transmission intervals; and inserting the first and second groups of ETTs into the data stream at the uniform transmission interval”

Claim 6 of 09/828,865, lines 1-5:

“A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital system packet stream and to insert a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the digital system packet stream”

correspond to claim 1, lines 1-4 of 11/075,944:

"An apparatus that optimizes bandwidth usage of a data stream and for inserting a plurality of event information tables (EITs) and a plurality of extended text tables into the data stream in a broadcast environment"

Claim 6 of 09/828,865, lines 6-18:

"an interface to supply issuance-interval setting information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the corresponding EIT is issued, and the issuance interval setting information is an assigned of each of the EITs to cover one of different ranges of broadcasting time; an interval determination unit to determine non-uniform issuance intervals respectively for the EITs, based upon the issuance interval setting information, and to determine a uniform issuance interval for the plurality of EITs to be transmitted in sequence, the EITs containing program description information associated with the EITs respectively, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearing a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future"

correspond to claim 1, lines 5-12 of 11/075,944:

"a generator to set a first transmission interval for a first group of EITs containing program information covering a first broadcast time, and a second transmission interval for a second group of EITs containing program information covering a second broadcast time after the first broadcast time and to generate the first and second groups of EITs,

Art Unit: 2623

wherein the generator is further configured to set a uniform transmission interval for a first group of ETTs containing program description associated with the first group of EITs and for a second group of ETTs containing program description associated with the second group of EITs, and to generate the first and second groups of ETTs"

Claim 6 of 09/828,865, lines 19-21:

"wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into the digital system packet stream"

correspond to claim 1, lines 13-18 of 11/075,944:

"wherein the generator inserts the first group of EITs into the data stream more frequently than the second group of EITs based on the first and second transmission intervals, and wherein the generator inserts the first group of ETTs and the second group of ETTs into the data stream at the uniform transmission interval."

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

5. Claim 9 is objected to because of the following informalities: On line 2 "optimize" should be changed to --optimize--.

Art Unit: 2623

6. Claim 22 is objected to because of the following informalities: On line 8 "issuance interval (EIT_{i-1}) = issuance interval (EIT_i) for $i = 1$ and 2," should be changed to -- issuance interval (ETT_{i-1}) = issuance interval (ETT_i) for $i = 1$ and 2,-- . Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Amending the claims to read "A computer readable medium encoded with computer readable instructions" as opposed to --Instructions encoded in a computer readable medium-- will obviate the rejection in view of 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 4, 6, 9, and 11-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Program Guide for Digital Television ATSC Standard A/65

Art Unit: 2623

[ATSC] in view of Arsenault et al. (6,658,661, of record) [Arsenault] and Waldroup (5,077,828, of record).

Regarding claims 1 and 13, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose optimizing bandwidth usage of a data stream by setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future and setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Arsenault teaches setting the issuance intervals for program guide data, respectively, to be non-uniform based on the range of broadcasting time which the program guide data is assigned to cover, wherein

the issuance interval for program guide data covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for program guide data covering a range of broadcasting time further in the future (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing the bandwidth usage of a data stream (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC to include setting the issuance intervals for program guide data, respectively, to be non-uniform based on the range of broadcasting time which the program guide data is assigned to cover, wherein the issuance interval for program guide data covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for program guide data covering a range of broadcasting time further in the future, as taught by Arsenault, wherein program guide data is described in EITs, providing the benefit of more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Waldroup teaches sending table data at periodic intervals to maintain current records of said data at a receiver (col. 7, lines 45-60).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Waldroup, wherein the table data are the ETTs

disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

Regarding claims 4 and 9, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) (pages 12 and 45). ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose optimizing bandwidth usage of a data stream by setting the issuance intervals for the EITs, respectively, to be non-uniform, wherein an issuance interval between any two adjacent instances of an i^{th} EIT is determined according to the following equation:

$$\text{interval}(i^{\text{th}} \text{ EIT}) = \text{root_time} + (\text{increment_time}) * i,$$

wherein $\text{interval}(i^{\text{th}} \text{ EIT})$ is the interval between any two adjacent instances of the i^{th} EIT, root_time is a predetermined interval for the EIT corresponding most closely in time to the present, increment_time is a non-zero integer, and setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Arsenault discloses a program and system information generator to generate tables for a digital television system packet stream (transmission station 14 shown in fig. 1 is the generator generating the

stream shown in fig. 5), the generator comprising an interface to supply issuance-setting information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence (the means that determines the timing of the carousels shown in fig. 5, col. 7, lines 23-30); and a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-setting information (the means that actually sets the timing information disclosed in col. 7, lines 43-49 for creating the stream shown in fig. 5), wherein among the tables, an issuance interval between any two adjacent instances of an i^{th} table (table 0, in the example given, is 0-6 hours of programming from the current time, and table 1 is 6-24 hours of programming from the current time, however this is entirely flexible and at the discretion of the designer, col. 7, lines 55-59) is determined according to the following equation:

$$\text{interval}(i^{\text{th}} \text{ table}) = \text{root_time} + (\text{increment_time}) * i,$$

wherein $\text{interval}(i^{\text{th}} \text{ table})$ is the interval between any two adjacent instances of the i^{th} table, root_time is a predetermined interval for the table corresponding most closely in time to the present, increment_time is a non-zero scalar and i is a non-zero integer (as shown in col. 7, lines 40-49, between the 0 and 1 tables, wherein $i = 1$, the interval for table 1 is 30 minutes and the root_time is 5 minutes, which is the interval for table 0, making the increment_time the non-zero scalar 25, thus satisfying the above equation

because $30 = 5 + 25 \times 1$), providing more efficient broadcasting of program guide data, optimizing the bandwidth usage of a data stream (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC to include setting the issuance intervals for program guide data tables, respectively, to be non-uniform, wherein an issuance interval between any two adjacent instances of an i^{th} table is determined according to the following equation:

$$\text{interval}(i^{\text{th}} \text{ table}) = \text{root_time} + (\text{increment_time}) \times i,$$

wherein $\text{interval}(i^{\text{th}} \text{ table})$ is the interval between any two adjacent instances of the i^{th} table, root_time is a predetermined interval for the program guide data corresponding most closely in time to the present, increment_time is a non-zero integer, as taught by Arsenault, wherein the program guide data tables are EITs, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Waldroup teaches sending table data at periodic intervals to maintain current records of said data at a receiver (col. 7, lines 45-60).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Waldroup, wherein the table data are the ETTs

disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

Regarding claims 6 and 14, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose a program and system information generator to optimize a bandwidth of a digital television system packet stream and to insert a plurality of EITs and a plurality of ETTs into the digital system packet stream, the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the correspond EIT is issued, and the issuance-interval setting information is an assignment of each of the EITs to cover one of different ranges of broadcasting time; and

an interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval setting information, and to determine a uniform issuance interval for a plurality of ETTs to be transmitted in sequence,

wherein among the EITs, the issuance interval for a EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for a EIT covering a range of broadcasting time further in the future; and

wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into the digital system packet stream.

In an analogous art, Arsenault discloses a program and system information generator to generate tables for a digital television system packet stream (transmission station 14 shown in fig. 1 is the generator generating the stream shown in fig. 5), the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence (the means that determines the timing of the carousels shown in fig. 5, col. 7, lines 23-30), wherein an issuance interval for a table is a period at which the correspond table is issued, and the issuance-interval setting information is an assignment of each of the tables to cover one of different ranges of broadcasting time (col. 7, lines 43-49); and

a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval setting information (the means that actually sets the timing information disclosed in col. 7, lines 43-49 for creating the stream shown in fig. 5),

wherein among the tables, the issuance interval for a table covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for a table covering a range of broadcasting time further in the future (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing bandwidth usage (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify ATSC to include a program and system information generator to generate tables for a digital television system packet stream, the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence, wherein an issuance interval for a table is a period at which the correspond table is issued, and the issuance-interval setting information is an assignment of each of the tables to cover one of different ranges of broadcasting time; and

a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval setting information,

wherein among the tables, the issuance interval for a table covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for a table covering a range of broadcasting time further in the future, as taught by Arsenault, wherein the tables of program guide data are EITs as disclosed by ATSC, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose determining a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Waldroup teaches sending table data at regular periodic intervals to maintain current records of said data at a receiver (col. 7, lines 45-60).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Waldroup, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

Regarding claim 11, ATSC, Arsenault, and Waldroup disclose the generator of claim 6, wherein said PSIP generator is embodied in the form of a processor running software (the generator is a digital computer system for receiving, generating, multiplexing, and broadcasting digital data streams, including the electronic program guide data, Arsenault, col. 5, lines 19-41).

Regarding claim 12, ATSC, Arsenault, and Waldroup disclose the generator of claim 11, but fail to disclose said software is writing in the computer language Java.

Using the computer language Java is notoriously well known in the art, as the Java language has the advantages of being a portable, cross-platform, object oriented software language.

Therefore, it would have been obvious at the time to a person of ordinary skill in the art to modify the generator of ATSC, Arsenault, and Waldroup to include said software is written in the computer language java, for the benefits of using a software language that is object oriented, portable, and platform independent, which simplifies the design and implementation of said software.

Regarding claims 15 and 17, ATSC, Arsenault, and Waldroup disclose the method and generator of claims 1 and 6, wherein the EITs include EIT-0, EIT-1, and EIT-2 (as shown in fig. 5.1 in ATSC).

Regarding claims 16 and 18, ATSC, Arsenault, and Waldroup disclose the method and generator of claims 15 and 17, wherein the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases (Arsenault, col. 7, lines 55-59).

Regarding claims 19 and 21-27, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45, including EIT-0, EIT-1, and EIT-2, see fig. 5.1), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33, including ETT-0, ETT-1, and ETT-2, see fig. 5.2).

ATSC fails to disclose a method and program and system information generator for determining transmission cycles of a group of EITs to optimize a bandwidth of a data stream, the method comprising:

setting the transmission cycles of the groups of EITs to be non-uniform with respect to each other, based on closeness in coverage time to which each EIT in the group is assigned, to a current broadcasting time, wherein among the group of EITs, the transmission cycle of an EIT assigned to a coverage time nearer the current time is set to be less than the transmission cycle of an EIT assigned to a coverage time further in the future from the current broadcasting time; and setting a uniform transmission cycle of a group of ETTs.

Arsenault discloses a method and program and system information generator (transmission station 14 shown in fig. 1 is the generator generating the

stream shown in fig. 5) for determining transmission cycles of a group of tables (fig. 5), the method comprising:

setting the transmission cycles of the groups of tables to be non-uniforms with respect to each other, based on closeness in coverage time to which each table in the group is assigned, to a current broadcasting time, wherein among the group of tables, the transmission cycle of a table assigned to a coverage time nearer the current time is set to be less than the transmission cycle of a table assigned to a coverage time further in the future from the current broadcasting time (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing bandwidth usage (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify ATSC to include a method and program and system information generator for determining transmission cycles of a group of tables, the method comprising setting the transmission cycles of the groups of tables to be non-uniforms with respect to each other, based on closeness in coverage time to which each table in the group is assigned, to a current broadcasting time, wherein among the group of tables, the transmission cycle of a table assigned to a coverage time nearer the current time is set to be less than the transmission cycle of a table assigned to a coverage time further in the future from the current broadcasting time, as taught by Arsenault; wherein the tables of program guide data are EITs as disclosed by ATSC, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform transmission cycle of a group of ETTs.

In an analogous art, Waldroup teaches sending table data at regular periodic intervals to maintain current records of said data at a receiver (col. 7, lines 45-60).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Waldroup, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

Regarding claims 20, ATSC, Arsenault, and Waldroup disclose the method of claim 19, wherein the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases (Arsenault, col. 7, lines 55-59).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2623

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Art Unit: 2623

Certificate of Mailing

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

Art Unit: 2623

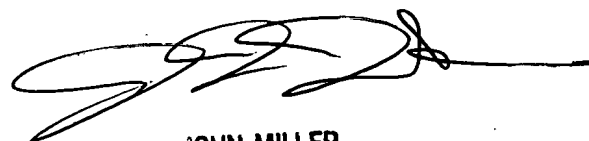
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic D. Saltarelli whose telephone number is (571) 272-7302. The examiner can normally be reached on Monday - Friday 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dominic Saltarelli
Patent Examiner
Art Unit 2611

DS



JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600